

Koalas *Phascolarctos cinereus* in Framlingham Forest, south-west Victoria: introduction, translocation and the effects of a bushfire

Robert L Wallis

Horsham Campus Research precinct, University of Ballarat, Horsham, Victoria 3402

Abstract

Koalas were introduced into Framlingham Forest, south-west Victoria, in 1971 and the population grew rapidly. By the 1990s the forest was suffering severe defoliation and many trees preferred by Koalas had been over-browsed. In 1998/99 around 1100 Koalas were captured, the males sterilised and animals translocated to other suitable habitats in western Victoria. Some habitat restoration was subsequently undertaken. In 2007 a deliberately lit fire destroyed most eucalypt foliage and many Koalas were killed or burned and removed by wildlife carers and DSE staff. A survey in 2011 found only two Koalas in the area. A Koala management plan for Framlingham Forest has been prepared. (*The Victorian Naturalist* 130 (1) 2013, 37-40)

Keywords: Koala *Phascolarctos cinereus*, management, Framlingham Forest, Indigenous Protected Area.

Introduction

There is debate on the conservation status of Koalas *Phascolarctos cinereus* in Australia, and the Senate Standing Committees on Environment and Communications has recently concluded an inquiry into the species' conservation management and status (Parliament of Australia 2011). In parts of Queensland and NSW there have been dramatic population declines of Koalas mainly through habitat loss, predation and roadkills, and the conservation status has been amended to threatened, while in Victoria and Kangaroo Island, South Australia, the problem facing wildlife managers is over-abundant populations of Koalas that cause severe defoliation, tree death and starvation of the animals.

This paper describes changes in Koala numbers in Framlingham Forest in south-west Victoria from their time of introduction 40 years ago, through a major translocation exercise in the 1990s and after a 2007 bushfire. This forest is a large (1130 ha) remnant native forest that is an Indigenous Protected Area (IPA) – land owned and managed by the local Aboriginal community for cultural and biodiversity conservation.

Framlingham Forest

The forest is located 25 km north-east of Warrnambool in south-west Victoria. The forest is bounded on the east by the Hopkins River and to the north, south and west by cleared

farmland. It is a remnant Brown Stringybark *Eucalyptus baxteri* and Manna Gum *E. viminalis* savannah that once dominated the landscape across much of south-west Victoria (Douglas 2004).

Aborigines have been living continuously in and around what is known as Framlingham Forest; in recognition of this, the land was vested by the Victorian Aboriginal Land Act 1987 to the Kirrae Whurrong Aboriginal Corporation. Later it became Victoria's second IPA and the Corporation owns and manages the property for cultural and biodiversity conservation.

Koalas in Framlingham Forest

It is unknown whether Koalas were present in what is now Framlingham Forest before European settlement. Certainly, locals do not recall seeing Koalas in the forest until 1971, when the Victorian Government released 30 unsterilised animals from French Island. There are no details available on the sex of the released animals. These translocated animals were free of the urogenital strain of *Chlamydia* (Martin and Handasyde 1999). Both the Australian and Victorian Governments' Koala Management Strategies list translocation as a method of reducing the impact of overbrowsing by Koalas (DEWHA – Department of Environment, Water, Heritage and the Arts 2009, DSE – Department of Sustainability and Environment 2004).

Contributions

The population grew rapidly and by the 1990s there were calls for intervention from local naturalists and residents to protect the forest and concerns raised about the health of animals (Martin pers. comm.).

During 1998/1999 DSE began a Koala sterilisation and translocation program. Goldstraw (pers. comm.) estimates some 1100 Koalas were removed to sites that included The Grampians National Park, Mt Cole, Central Highlands and near Casterton. A veterinary surgeon supervised the vasectomies of male animals so that the only fertile males released would theoretically ultimately have been male pouch and 'on-back' young. Koalas were also removed from sites adjoining Framlingham Forest, along the Hopkins River. DSE was unable to provide details of the age, sex and destination of the translocated animals. The overpopulation had destroyed almost all mature Manna Gums and damaged Swamp Gums *E. ovata* and River Red Gums *E. camaldulensis*. Koalas were reported eating non-preferred species such as Messmate Stringbark *E. obliqua* and exotics, which suggests food was limited. A revegetation scheme was undertaken by volunteers (Fig. 1). Goldstraw (pers. comm.) reports that on one occasion he stood in the centre of the picnic ground and counted 11 Koalas in trees surrounding the car park.

Natasha McLean, a postgraduate student at The University of Melbourne, studied the Koalas that were captured and translocated. In 2003 she was awarded a PhD in which, *inter alia*, she examined data for the parameters that contribute to population growth, such as age structure,



Fig. 1. Trees planted by volunteers.

sex ratio, and age-specific schedules of mortality and fecundity in a series of overpopulated Koala sites in Victoria (McLean 2003; McLean and Handasyde 2006). The only notable difference between Koalas from Framlingham Forest and those from their original site (French Island) was that at Framlingham Forest 85% of births occurred between December and March, compared with 53% at French Island, indicating a highly seasonal breeding pattern at Framlingham.

On 10 January 2007, a fire that is believed to have been deliberately lit (Thomson and Quirk 2012) raged through the Forest (Warrnambool Wildlife Rescue 2007). Approximately 95% of the remaining Manna Gums were destroyed by this high-intensity fire (Watson pers. comm.) (Figs. 2, 3). DSE records show 147 injured Koalas were rescued by volunteers, although many animals were not reported; a DSE debriefing with veterinarians suggests up to 450 surviving



Fig. 2. Same site post fire.



Fig. 3. Vegetation post fire. Some sites (foreground) were razed while the canopies in others were badly burned.



Fig. 4. Aftermath of the January 2007 fire.

Koalas were removed over six weeks post fire. There were reports of many animals killed by the fire, although there are no details available on the actual number (Warrnambool Wildlife Rescue 2007) (Fig. 4).

In 2011 two brief surveys of the road and tracks of Framlingham Forest were undertaken by Deakin University students (9 half hour surveys) and the Warrnambool Field Naturalists Club (2 hours) respectively. Both surveys found two Koalas in the Forest.

Koalas affected by fire

Some 147 Koalas were recorded as rescued after the January 2007 fire. As the responsible agency, DSE coordinated the rescue but members of the Warrnambool Wildlife Rescue group, carers, volunteer wildlife veterinarians and other volunteers undertook much of the rescue operation. Seventy-eight of the collected animals were female; of the animals whose ages were estimated, the 3–5 year old cohort was the most common (23 animals). There were five classed by DSE as ‘babies’ (presumably pouch young), five animals estimated to be between five months and 10 months old, six classed as over six years old and another four listed as ‘adult’.

Animals were collected three days after the fire and for the next 21 days. Most animals were collected 17 days after the fire, although daily collection efforts might have varied.

The fates of 87 animals were recorded; these did not include pouch young that were with

their mothers. Wildlife carers took 38 (the final fate of which is unknown), 33 were released by DSE staff to the nearby Crawford River Regional Park, two went to Healesville Sanctuary, and 14 were either euthanised or died after rescue.

Future management of Koalas in Framlingham Forest

Wallis and Martin (2011) prepared a Koala population management plan for Framlingham Forest for the Kirrae Whurrong Aboriginal Corporation. This report was to inform the Environmental Management Plan for the forest. The Koala population management plan included the following recommendations:

- Regular monitoring of Koalas along a designated survey route should be undertaken. It was recommended regular surveys be conducted and the Koala numbers plotted over time. When rate of growth of numbers appears maximal, DSE Natural Resources – Biodiversity staff should be notified so a population management program can be implemented. Wallis and Martin (2011) suggested this might equate to 50 animals observed along the designated survey route.
- The land managers should not attempt any Koala population regulation activities themselves but instead rely on DSE expertise.
- If the land managers wish to enhance Koala habitat, the health and numbers of *E. viminalis* should be monitored and if these characteristics are deficient after say three years, initiate a planting program of preferred trees, similar to the previous habitat rehabilitation program.
- If Koala numbers again build up, land managers might wish to seek support from the Commonwealth and State Governments to conduct: (i) a eucalypt mapping survey of forest, and (ii) a study of the genetic diversity of the Koala population.

Acknowledgements

I thank Neil Martin, Framlingham Aboriginal Trust, for suggesting the survey work and management plan, for the photographs and for his advice and support throughout the project. I also thank Lisa Shuck and students undertaking ESS420 from Deakin University. Mandy Watson from DSE is especially thanked for providing the data on injured Koalas, her useful comments on the manuscript and the aerial photograph.

References

- DEWHA – Department of Environment, Water, Heritage and the Arts (2009) *National Koala Conservation and Management Strategy*. (Natural Resource Management Ministerial Council, DEWHA: Canberra) <http://www.environment.gov.au/biodiversity/publications/koala-strategy/pubs/koala-strategy.pdf> (accessed 7 March 2012).
- Department of Sustainability and Environment (2004) *Victoria's Koala Management Strategy*. (DSE: Melbourne)
- Douglas J (ed) (2004) *The Nature of Warrnambool* (Warrnambool Field Naturalists Club: Warrnambool)
- Martin R and Handasyde K (1999) *The Koala: Natural History, Conservation and Management* (University of NSW Press: Kensington)
- McLean N (2003) Ecology and management of overabundant koala (*Phascolarctos cinereus*) populations. (Unpublished PhD thesis, The University of Melbourne)
- McLean N and Handasyde K (2006) Sexual maturity, factors affecting the breeding season and breeding in consecutive seasons in populations of overabundant Victorian koalas (*Phascolarctos cinereus*). *Australian Journal of Zoology* 54, 385–392.
- Parliament of Australia (2011) *The Koala – Saving our National Icon*. (Senate Committee for Environment and Communications: Canberra) http://www.aph.gov.au/senate/committee/ec_ctte/koalas/report/bo3.htm (accessed 7 March 2012).
- Thomson A and Quirk C (2012) Air, ground blitz on Framlingham fire. *Warrnambool Standard* 15 March 2012, p.2.
- Wallis R and Martin N (2011) Framlingham Forest Koala Population Management Plan. Unpublished report to Kirrae Whurrong Aboriginal Corporation, Framlingham, Victoria.
- Warrnambool Wildlife Rescue (2007) Framlingham bush fire. <http://www.warrnambool-wildlife.org.au/gpage7.html> (accessed 8 March 2012).

Received 22 March 2012; accepted 26 July 2012

A rare sighting of the Eastern Pygmy-possum *Cercartetus nanus* in north-central Victoria

Anna K Flanagan-Moodie

School of Life and Environmental Sciences, Deakin University, 221 Burwood Highway, Burwood, Victoria 3125
Email: afl@deakin.edu.au

Abstract

The Eastern Pygmy-possum *Cercartetus nanus* is a small, omnivorous marsupial found in south-eastern Australia. In Victoria, the present distribution of *C. nanus* is geographically patchy, generally associated with forests of the Great Dividing Range, but also a range of coastal forests and shrublands. In Box-Ironbark forests of north-central Victoria, *C. nanus* appears to have undergone a severe population decline. In April 2011, a single Eastern Pygmy-possum was observed in the Redcastle-Graytown State Forest during nocturnal survey work. This is a notable record considering that the species has not otherwise been reported from this area for approximately 40 years. (*The Victorian Naturalist* 130 (1) 2013, 40–44)

Keywords: mammal, Box-Ironbark Forest, Redcastle-Graytown State Forest, Heathcote-Graytown National Park.

Introduction

The Eastern Pygmy-possum *Cercartetus nanus* is a small (~17–42 g), omnivorous marsupial of south-eastern Australia (Harris 2008). Its geographic range extends from south-eastern South Australia, through Victoria and New South Wales, to south-eastern Queensland (Ward 1990; Harris *et al* 2007; Menkhorst and Knight 2011); and also includes Tasmania (Harris *et al* 2008). The main threats to the conservation of *C. nanus* are reported to be inappropriate fire regimes resulting in a reduction of the shrub layer, habitat loss, and introduced predators (Harris 2008). The conservation

status of the species is listed as vulnerable in New South Wales (New South Wales Government 2012) and South Australia (Government of South Australia 2011). In Victoria, it is not listed as being threatened, although concerns have been expressed about its status (Harris and Goldingay 2005; Harris 2008; Department of Sustainability and Environment 2010).

Cercartetus nanus is considered to be a mid-storey specialist, occurring in a range of vegetation types such as rainforest, sclerophyll forest, shrubland, heathland and woodland (Harris 2008). It is commonly associated with a dense